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WATER COMPATIBLE ENERGY CURABLE COMPOSITIONS CONTAINING MALEMIDE DERIVATIVES

BACKGROUND OF INVENTION

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This application is a Divisional of United States Patent Application No. 09/831,688, entitled "Water Compatible Energy Curable Compositions Containing Maleimide Derivatives", now ~~pending~~^{U.S. Patent No. 6,706,777.}

Field of the Invention

The present invention relates to active water compatible energy curable compositions containing a maleimide derivative, useful for preparing various coatings, printing inks, surface finishes, moldings, laminated plates, adhesives, and binders. More specifically, the present invention relates to active water compatible energy curable compositions, which can be cured in the absence of a photoinitiator with an irradiation source of practical intensity and energy value.

Description of Related Art

An active energy curable composition polymerized under irradiation of active energy such as thermal energy, ultraviolet light, visible light, and the like, has an advantage of being rapidly cured. Active energy curable compositions are widely used as paints, inks, adhesives, coatings, and the like. However, conventional ultraviolet active energy curable compositions cannot initiate polymerization alone upon irradiation with an energy source; it is therefore necessary to use a photoinitiator. When photoinitiators are used in large quantities, curing progresses rapidly, which encourages the use of large quantities of photoinitiator.

Photoinitiator compounds having an aromatic ring are used in general because they effectively absorb ultraviolet light. However, these compounds cause problems such as the yellowing of the cured materials